1077-47-1097 **Derek Allen Thompson*** (theycallmedt@gmail.com), 4253 Willow Bend Dr., Apt. D, Beech Grove, IN 46107. *Restrictions to Invariant Subspaces of Composition Operators.* Preliminary report.

If ϕ is an analytic map of the disk into itself and H is a Hilbert space of analytic functions on the disk, the composition operator C_ϕ is the operator given by $C_\phi f = f \circ \phi$ for f in H.

Though we have learned much about composition operators and their affect on Hilbert spaces of analytic functions, little is yet known about the restrictions of these operators to invariant subspaces. For example, if a composition operator C_ϕ on the Hardy space $H^2(D)$ is such that its symbol $\phi : D \to D$ fixes the origin, then for $k \in \mathbb{N}$ the subspaces $z^k H^2 = \{z^k f | f \in H^2\}$ are invariant for C_ϕ. What are the norms of these restrictions? What are their spectra? Are they ever unitarily equivalent? We explore what is known about these restrictions and pose further questions. (Received September 16, 2011)